

Attorney Docket No. 0025-013

Application No. 10/784,102

IN THE CLAIMSRECEIVED  
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Please amend the claims as follows:

- 1 1. (original) A camera module apparatus, comprising:  
2 a camera integrated circuit chip;  
3 a lens; and  
4 a molding formed on the integrated circuit chip for holding the lens such that the lens is  
5 positioned thereby in relation to the integrated circuit chip.
- 1 2. (original) The camera module apparatus of claim 1, wherein:  
2 the camera integrated circuit chip is mounted on a printed circuit board.
- 1 3. (original) The camera module apparatus of claim 1, further comprising:  
2 a protective cover over the integrated circuit chip.
- 1 4. (original) The camera module apparatus of claim 3, wherein:  
2 the protective cover is a molded spacer.
- 1 5. (original) The camera module apparatus of claim 3, wherein:  
2 the protective cover is a glass sheet.
- 1 6. (original) The camera module apparatus of claim 1, wherein:  
2 the molding has a recess for receiving the lens.
- 1 7. (original) The camera module apparatus of claim 1, wherein:  
2 the lens is held in place on the molding by an adhesive.
- 1 8. (original) The camera module apparatus of claim 1, wherein:  
2 the molding has a recess for positioning the lens relative to the integrated circuit chip.

Attorney Docket No. 0025-013

Application No. 10/784,102

- 1 9. (currently amended) An integrated camera circuit and lens module, comprising:  
2 a camera integrated circuit; and  
3 a holder formed at least partially on the camera integrated circuit; and  
4 a lens assembly; and wherein  
5 the lens assembly is affixed to the integrated circuit via the holder.
- 1 10. (currently amended) The integrated camera circuit and lens module of claim 9, wherein:  
2 the lens assembly is rigidly affixed to the integrated circuit via the holder such that there is  
3 a gap between at least a portion of the lens assembly and a sensor array of the integrated circuit.
- 1 11. (currently amended) The integrated camera circuit and lens module of claim 9, wherein:  
2 ~~the lens assembly is attached to the integrated circuit by~~ holder is a molded component.
- 1 12. (currently amended) The integrated camera circuit and lens module of claim 11, wherein:  
2 the lens assembly is attached to the ~~molding~~ holder by an adhesive.
- 1 13. (original) The integrated camera circuit and lens module of claim 9, wherein:  
2 the integrated circuit is mounted on a circuit board.
- 1 14. (currently amended) The integrated camera circuit and lens module of claim 9, further  
2 comprising:  
3 a protective cover held in place over the integrated circuit chip by the holder.
- 1 15. (original) The integrated camera circuit and lens module of claim 14, wherein:  
2 the protective cover is a molded spacer.
- 1 16. (original) The integrated camera circuit and lens module of claim 14, wherein:  
2 the protective cover is a glass sheet.

Attorney Docket No. 0025-013

Application No. 10/784,102

- 1 17. (original) A method for producing a camera module, comprising:  
2 molding a receptacle over an integrated circuit;  
3 inserting a lens assembly into the receptacle; and  
4 securing the lens assembly into the receptacle.  
5
- 1 18. (original) The method of claim 17, wherein:  
2 the lens assembly is secured to the receptacle by an adhesive.
- 1 19. (original) The method of claim 17, wherein:  
2 the integrated circuit is secured to a circuit board before the receptacle is molded over the  
3 integrated circuit.
- 1 20. (original) The method of claim 17, wherein:  
2 the receptacle includes a recessed portion for receiving the lens assembly.
- 1 21. (original) The method of claim 20, wherein:  
2 the recess portion includes a projection for fixing the distance of the lens assembly from  
3 the integrated circuit.
- 1 22. (original) The method of claim 17, wherein:  
2 the camera module is affixed to a flex circuit.
- 1 23. (original) The method of claim 17, further comprising:  
2 placing a protective cover over the integrated circuit.
- 1 24. (original) The method of claim 23, wherein:  
2 the step of placing the protective cover over the integrated circuit occurs during the step of  
3 molding a receptacle over the integrated circuit.
- 1 25. (original) The method of claim 23, wherein:  
2 the protective cover is a molded spacer.

Attorney Docket No. 0025-013

Application No. 10/784,102

26. (original) The method of claim 23, wherein:

the protective cover is a glass plate.

27. (currently amended) ~~An~~ A camera apparatus, comprising:

an integrated circuit camera apparatus having thereon a photosensitive array; and

a lens assembly for focusing light on the photosensitive array; wherein

the lens assembly is rigidly affixed on the integrated circuit camera apparatus by a lens

assembly receiving apparatus formed integrally on the integrated circuit camera apparatus.

28. (original) The camera apparatus of claim 27, wherein:

the lens assembly has a housing for receiving at least one lens.

29. (original) The camera apparatus of claim 27, wherein:

the lens assembly has a housing for receiving two lenses.

30. (original) The camera apparatus of claim 27, wherein:

the integrated circuit camera apparatus is affixed to a circuit board.

31. (currently amended) The camera apparatus of claim 27, wherein:

the integrated circuit camera apparatus is affixed to a circuit board; and

~~a lens~~ the lens assembly receiving apparatus is ~~affixed to~~ formed at least partially on the  
circuit board.

32. (original) The camera apparatus of claim 31, wherein:

the lens assembly receiving apparatus is a molded receptacle.

33. (original) The camera apparatus of claim 31, wherein:

the lens assembly is rigidly affixed within the lens assembly receiving apparatus.

Attorney Docket No. 0025-013

Application No. 10/784,102

1 34. (original) The camera apparatus of claim 31, wherein:

2 the lens assembly is affixed within the lens assembly receiving apparatus by an adhesive.

1 35. (currently amended) The camera apparatus of claim 27, further comprising:

2 a protective cover fixed between the integrated circuit camera apparatus and the lens

3 assembly by the lens assembly receiving apparatus.

1 36. (original) The camera apparatus of claim 35, wherein:

2 the protective cover is a molded spacer.

1 37. (original) The camera apparatus of claim 35, wherein:

2 the protective cover is a glass plate.

1 38. (currently amended) The camera apparatus of claim 35, wherein:

2 the protective cover is held in place by the lens assembly receiving apparatus is an

3 overmold formed over the integrated circuit camera apparatus.

1 39. (currently amended) A camera module apparatus, comprising:

2 a camera integrated circuit chip;

3 a lens; and

4 means for holding the lens such that the lens is positioned thereby in relation to the  
5 integrated circuit chip, said means for holding the lens including a molded component formed on

6 the camera integrated circuit chip.

1 40. (new) The method of claim 17, wherein:

2 the step of molding the receptacle over the integrated circuit includes contacting a top  
3 surface of the integrated circuit with a mold insert.

1 41. (new) The method of claim 17, wherein:

2 the mold insert includes a compliant surface to protect the integrated circuit.

Attorney Docket No. 0025-013

Application No. 10/784,102

- 1 42. (new) The method of claim 17, wherein:  
2 the step of molding the receptacle over the integrated circuit includes simultaneously  
3 molding a receptacle over each of a plurality of integrated circuits.
- 1 43. (new) The method of claim 17, wherein:  
2 the step of molding the receptacle over the integrated circuit occurs at a time when the  
3 integrated circuit is physically coupled to other integrated circuits.
- 1 44. (new) The method of claim 43, wherein:  
2 the step of molding the receptacle over the integrated circuit includes simultaneously  
3 molding receptacles over at least some of the other integrated circuits.
- 1 45. (new) The method of claim 43, wherein:  
2 the integrated circuit and the other integrated circuits are physically coupled by being  
3 mounted on a unitary substrate; and  
4 the integrated circuit and the other integrated circuits are subsequently separated by  
5 dividing the unitary substrate.
- 1 46. (new) The camera module apparatus of claim 1, wherein:  
2 a top surface of the camera integrated circuit chip includes a sensor array; and  
3 the molding is adhered to the top surface.
- 1 47. (new) The integrated camera circuit and lens module of claim 9, wherein:  
2 a top surface of the camera integrated circuit includes a sensor array; and  
3 the holder is adhered to the top surface.
- 1 48. (new) The camera apparatus of claim 27, wherein:  
2 the photosensitive array is on a top surface of the integrated circuit camera apparatus; and  
3 the lens assembly receiving apparatus is adhered to the top surface.